

WHAT IS CLAIMED IS:

1. A method of tracing drains in a building comprising:
  - (1) surveying the building to locate all existing drains;
  - (2) numbering all of the existing drains;
  - 5 (3) creating a Master Blueprint and a Master Spreadsheet showing all of the drains;
  - (4) using a tracer to determine whether the storm water from the building actually flows from each storm drain to the storm water manhole and recording the information determined about the flow pattern of each storm drain tested on the Master Blueprint and on the Master Spreadsheet;
  - 10 (5) selecting the test location to withdraw the sample of water, wherein said test location is selected from the group consisting of all storm manholes and all sanitary manholes;
  - (6) running water continuously through a drain that drains into the test location manhole selected in Step (5);
  - 15 (7) selecting a target sanitary drain and adding an amount of non-toxic fluorescent tracer to the target sanitary drain, wherein the amount of non-toxic fluorescent tracer added is such that the fluorescent signal of non-toxic fluorescent tracer is detectable over the background fluorescence of the water in said sanitary drain;
  - (8) using a fluorometer to detect the fluorescent signal of said non-toxic fluorescent tracer in the sample of water withdrawn at the test location selected in Step (5);
  - 20 (9) using the fluorescent signal to determine whether the target sanitary drain is draining to the test location selected in Step (5) and recording the information determined

about the flow pattern of said target sanitary drain on the Master Blueprint and on the Master Spreadsheet;

(10) repeating Steps (4), (5), (6), (7), (8) and (9) as necessary such that all sanitary drains are traced; and

5 (11) using the information from the Master Blueprint and Master Spreadsheet to determine where all sanitary drains and storm drains are draining.

2. The method of Claim 1 further comprising:

(12) effecting repairs to the building such that the drains tested are configured such that they drain to their intended location.

3. The method of Claim 2 further comprising:

(13) retesting the drains using the method of Steps (4) through (11) to ensure that all drains are now draining to their intended location.

4. A method of tracing drains in a building comprising:

- (1) surveying the building to locate all existing drains;
  - (2) numbering all of the existing drains;
  - (3) creating a Master Blueprint and a Master Spreadsheet showing all of the drains;
  - (4) using a tracer to determine whether the storm water from the building actually flows from each storm drain to the storm water manhole and recording the information
- 20 determined about the flow pattern of each storm drain tested on the Master Blueprint and on the Master Spreadsheet;

- (5) selecting the test location to withdraw the sample of water, wherein said test location is selected from the group consisting of all storm manholes and all sanitary manholes;
- (6) running water continuously through a drain that drains into the test location manhole selected in Step (5);
- (7) selecting a target sanitary drain and adding an amount of non-toxic fluorescent tracer to the target sanitary drain, wherein the amount of non-toxic fluorescent tracer added is such that the concentration of non-toxic fluorescent tracer is at least about 600 ppm in the water in said target sanitary drain;
- (8) using a fluorometer to detect the fluorescent signal of said non-toxic fluorescent tracer in the sample of water withdrawn at the test location selected in Step (5);
- (9) using the fluorescent signal to determine whether the target sanitary drain is draining to the test location selected in Step (5) and recording the information determined about the flow pattern of said target sanitary drain on the Master Blueprint and on the Master Spreadsheet;
- (10) repeating Steps (4), (5), (6), (7), (8) and (9) as necessary such that all sanitary drains are traced; and
- (11) using the information from the Master Blueprint and Master Spreadsheet to determine where all sanitary drains and storm drains are draining.

5. The method of Claim 4 further comprising:

- (12) effecting repairs to the building such that the drains tested are configured such that they drain to their intended location.

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7. A method of tracing drains of interest in a building comprising:

(1) surveying the building to locate the drains of interest;

(2) numbering all of the drains of interest;

5 (3) creating a Master Blueprint and a Master Spreadsheet showing all of the drains of interest;

(4) using a tracer to determine whether the storm water from the building actually flows from the storm drains of interest to the storm water manhole and recording the information determined about the flow pattern of each storm drain tested on the Master Blueprint and on the Master Spreadsheet;

(5) selecting the test location to withdraw the sample of water, wherein said test location is selected from the group consisting of all storm manholes and all sanitary manholes;

(6) running water continuously through a drain that drains into the test location manhole selected in Step (5);

(7) selecting a target sanitary drain of interest and adding an amount of non-toxic fluorescent tracer to the target sanitary drain of interest, wherein the amount of non-toxic fluorescent tracer added is such that the fluorescent signal of non-toxic fluorescent tracer is detectable over the background fluorescence of the water in said target sanitary drain of interest;

(8) using a fluorometer to detect the fluorescent signal of said non-toxic fluorescent tracer in the sample of water withdrawn at the test location selected in Step (5);

(9) using the fluorescent signal to determine whether the target sanitary drain of interest is draining to the test location selected in Step (5) and recording the information determined about the flow pattern of said target sanitary drain of interest on the Master Blueprint and on the Master Spreadsheet;

5 (10) repeating Steps (4), (5), (6), (7), (8) and (9) as necessary such that all sanitary drains of interest are traced; and

(11) using the information from the Master Blueprint and Master Spreadsheet to determine where the sanitary drains of interest and the storm drains of interest, are draining.

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8. The method of Claim 7 further comprising:

- (12) effecting repairs to the building such that the drains tested are configured such that they drain to their intended location.

5 9. The method of Claim 8 further comprising:

- (13) retesting the drains using the method of Steps (4) through (11) to ensure that all drains are now draining to their intended location.

10. A method of tracing drains of interest in a building comprising:

- (1) surveying the building to locate the drains of interest;
- (2) numbering all of the drains of interest;
- (3) creating a Master Blueprint and a Master Spreadsheet showing all of the drains of interest;
- (4) using a tracer to determine whether the storm water from the building actually flows from the storm drains of interest to the storm water manhole and recording the information determined about the flow pattern of each storm drain tested on the Master Blueprint and on the Master Spreadsheet;
- (5) selecting the test location to withdraw the sample of water, wherein said test location is selected from the group consisting of all storm manholes and all sanitary manholes;
- (6) running water continuously through a drain that drains into the test location manhole selected in Step (5);

- (7) selecting a target sanitary drain of interest and adding an amount of non-toxic fluorescent tracer to the target sanitary drain of interest, wherein the amount of non-toxic fluorescent tracer added is such that the concentration of non-toxic fluorescent tracer is at least about 600 ppm in the water in said target sanitary drain of interest;
- 5 (8) using a fluorometer to detect the fluorescent signal of said non-toxic fluorescent tracer from the sample of water withdrawn at the test location selected in Step (5);
- (9) using the fluorescent signal to determine whether the target sanitary drain of interest is draining to the test location selected in Step (5) and recording the information determined about the flow pattern of said target sanitary drain of interest on the Master Blueprint and on the Master Spreadsheet;
- 10 (10) repeating Steps (4), (5), (6), (7), (8) and (9) as necessary such that all sanitary drains of interest are traced;
- 15 (11) using the information from the Master Blueprint and Master Spreadsheet to determine where the sanitary drains of interest and the storm drains of interest are draining.

11. The method of Claim 10 further comprising:

- (12) effecting repairs to the building such that the drains tested are configured such that they drain to their intended location.

20 12. The method of Claim 11 further comprising:

- (13) retesting the drains using the method of Steps (4) through (11) to ensure that all drains are now draining to their intended location.



13. The method of Claim 1 in which the tracer used in Step (4) is a visible dye tracer and the non-toxic fluorescent tracer used in Step (7) is selected from the group consisting of 1,3,6,8-pyrenetetrasulfonic acid, tetrasodium salt and 1,5-naphthalenedisulfonic acid, disodium salt.

14. The method of Claim 4 in which the tracer used in Step (4) is a visible dye tracer and the non-toxic fluorescent tracer used in Step (7) is selected from the group consisting of 1,3,6,8-pyrenetetrasulfonic acid, tetrasodium salt and 1,5-naphthalenedisulfonic acid, disodium salt.

15. The method of Claim 7 in which the tracer used in Step (4) is a visible dye tracer and the non-toxic fluorescent tracer used in Step (7) is selected from the group consisting of 1,3,6,8-pyrenetetrasulfonic acid, tetrasodium salt and 1,5-naphthalenedisulfonic acid, disodium salt.

16. The method of Claim 10 in which the tracer used in Step (4) is a visible dye tracer and the non-toxic fluorescent tracer used in Step (7) is selected from the group consisting of 1,3,6,8-pyrenetetrasulfonic acid, tetrasodium salt and 1,5-naphthalenedisulfonic acid, disodium salt.

17. The method of Claim 1 in which the drain chosen in Step (6) to run water continuously through is the drain that takes the longest amount of time to drain to the test location manhole.

- 20 18. The method of Claim 4 in which the drain chosen in Step (6) to run water  
continuously through is the drain that takes the longest amount of time to drain to the  
test location manhole.

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